

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.

AMENDMENTS TO THE CLAIMS:

Claims 68-139 are pending. Claims 78-85, 96-103, 114-121 and 132-239 are withdrawn from consideration. Claims 68, 74, 86, 92, 104, 110, 122 and 128 are amended.

Claims 1-67 (Canceled)

68. (Currently amended) A variant of a parent alpha-amylase enzyme, wherein said parent alpha-amylase has an amino acid sequence which has at least 80% homology to SEQ ID NO:3, and wherein said variant has at least 80% identity to said parent alpha-amylase and comprises deletions at positions equivalent to positions 180 and 181 in SEQ ID NO:3 (using SEQ ID NO:3 for numbering).

69. (Previously presented) The variant of claim 68, wherein said parent alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

70. (Previously presented) The variant of claim 68, wherein said parent alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

71. (Previously presented) The variant of claim 68, wherein said parent alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

72. (Previously presented) The variant of claim 68, wherein said variant further comprises amino acid substitutions of a cysteine at positions equivalent to positions 349 and 428 in SEQ ID NO:3.

73. (Previously presented) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 80% homology to SEQ ID NO:3, modified by having deletions at positions equivalent to positions 180 and 181 in SEQ ID NO:3.

74. (Currently amended) ~~The alpha-amylase enzyme of claim 73, wherein said alpha-amylase enzyme is further modified by having amino acid substitutions of a cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3~~An isolated alpha-amylase comprising an

alpha-amylase of claim 73 having amino acid substitutions of cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3.

75. (Previously presented) The alpha-amylase of claim 73, wherein said alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

76. (Previously presented) The alpha-amylase of claim 73, wherein said alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

77. (Previously presented) The alpha-amylase of claim 73, wherein said alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

Claims 78-85 (Withdrawn)

86. (Currently amended) A variant of a parent alpha-amylase enzyme, wherein said parent alpha-amylase has an amino acid sequence which has at least 80% homology to SEQ ID NO:3, and wherein said variant has at least 80% identity to said parent alpha-amylase and comprises deletions at positions equivalent to positions 179 and 181 in SEQ ID NO:3 (using SEQ ID NO:3 for numbering).

87. (Previously presented) The variant of claim 86, wherein said parent alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

88. (Previously presented) The variant of claim 86, wherein said parent alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

89. (Previously presented) The variant of claim 86, wherein said parent alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

90. (Previously presented) The variant of claim 86, wherein said variant further comprises amino acid substitutions of a cysteine at positions equivalent to positions 349 and 428 in SEQ ID NO:3.

91. (Previously presented) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 80% homology to SEQ ID NO:3, modified by having deletions at positions equivalent to positions 179 and 181 in SEQ ID NO:3.

92. (Currently amended) ~~The alpha-amylase enzyme of claim 91, wherein said alpha-amylase enzyme is further modified by having amino acid substitutions of a cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3~~An isolated alpha-amylase comprising an alpha-amylase of claim 91 having amino acid substitutions of cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3.

93. (Previously presented) The alpha-amylase of claim 91, wherein said alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

94. (Previously presented) The alpha-amylase of claim 91, wherein said alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

95. (Previously presented) The alpha-amylase of claim 91, wherein said alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

Claims 96-103 (Withdrawn)

104. (Currently amended) A variant of a parent alpha-amylase enzyme, wherein said parent alpha-amylase has an amino acid sequence which has at least 80% homology to SEQ ID NO:3, and wherein said variant has at least 80% identity to said parent alpha-amylase and comprises deletions at positions equivalent to positions 179 and 182 in SEQ ID NO:3 (using SEQ ID NO:3 for numbering).

105. (Previously presented) The variant of claim 104, wherein said parent alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

106. (Previously presented) The variant of claim 104, wherein said parent alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

107. (Previously presented) The variant of claim 104, wherein said parent alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

108. (Previously presented) The variant of claim 104, wherein said variant further comprises amino acid substitutions of a cysteine at positions equivalent to positions 349 and 428 in SEQ ID NO:3.

109. (Previously presented) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 80% homology to SEQ ID NO:3, modified by having deletions at positions equivalent to positions 179 and 182 in SEQ ID NO:3.

110. (Currently amended) ~~The alpha-amylase enzyme of claim 109, wherein said alpha-amylase enzyme is further modified by having amino acid substitutions of a cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3.~~ An isolated alpha-amylase comprising an alpha-amylase of claim 109 having amino acid substitutions of cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3.

111. (Previously presented) The alpha-amylase of claim 109, wherein said alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

112. (Previously presented) The alpha-amylase of claim 109, wherein said alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

113. (Previously presented) The alpha-amylase of claim 109, wherein said alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

Claims 114-121 (Withdrawn)

122. (Currently amended) A variant of a parent alpha-amylase enzyme, wherein said parent alpha-amylase has an amino acid sequence which has at least 80% homology to SEQ ID NO:3, and wherein said variant has at least 80% identity to said parent alpha-amylase and comprises deletions at positions equivalent to positions 180 and 182 in SEQ ID NO:3 (using SEQ ID NO:3 for numbering).

123. (Previously presented) The variant of claim 122, wherein said parent alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

124. (Previously presented) The variant of claim 122, wherein said parent alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

125. (Previously presented) The variant of claim 122, wherein said parent alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

126. (Previously presented) The variant of claim 122, wherein said variant further comprises amino acid substitutions of a cysteine at positions equivalent to positions 349 and 428 in SEQ ID NO:3.

127. (Previously presented) An isolated alpha-amylase enzyme comprising an amino acid sequence having an amino acid sequence which has at least 80% homology to SEQ ID NO:3, modified by having deletions at positions equivalent to positions 180 and 182 in SEQ ID NO:3.

128. (Currently amended) ~~The alpha-amylase enzyme of claim 127, wherein said alpha-amylase enzyme is further modified by having amino acid substitutions of a cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3~~ An isolated alpha-amylase comprising an alpha-amylase of claim 127 having amino acid substitutions of cysteine at positions equivalent to 349 and 428 in SEQ ID NO:3.

129. (Previously presented) The alpha-amylase of claim 127, wherein said alpha-amylase has an amino acid sequence which has at least 85% homology to SEQ ID NO:3.

130. (Previously presented) The alpha-amylase of claim 127, wherein said alpha-amylase has an amino acid sequence which has at least 90% homology to SEQ ID NO:3.

131. (Previously presented) The alpha-amylase of claim 127, wherein said alpha-amylase has an amino acid sequence which has at least 95% homology to SEQ ID NO:3.

Claims 132-139. (Withdrawn)